

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number
WO 2005/048765 A1

(51) International Patent Classification⁷: **A45B 15/00**,
19/04, 19/06, 19/08, 19/10, 23/00, 25/00, 25/02, 25/18,
E04H 15/28

(21) International Application Number:
PCT/NZ2004/000292

(22) International Filing Date:
16 November 2004 (16.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
529621 18 November 2003 (18.11.2003) NZ

(71) Applicant and

(72) Inventor: **BREBNER, Greig, Reid** [NZ/NZ]; 214 Riddell
Road, Glendowie, Auckland, 1005 (NZ).

(74) Agents: **ADAMS, Matthew, D et al.**; A J Park, 6th Floor
Huddart Parker Building, PO Box 949, Wellington, 6015
(NZ).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

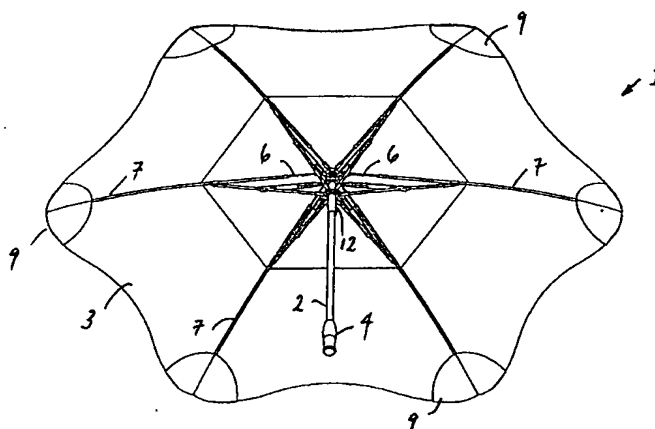
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: UMBRELLA



(57) Abstract: An umbrella (1) in which the canopy is supported, tensioned and retained on a frame without any external points. The ends of conventional ribs (6,7) are provided with force spreading components (8) which are located within pockets (9) at the periphery of the umbrella canopy (3). As the umbrella is erected, the force spreading components open to provide a surface which pushes outwardly against a bearing surface formed between a pocket and the canopy, which "spread" outwards. The spreading of the components (8) is initiated by the radially outward movement of slidable tubes (7) upon inner rods (6) attached at their inner ends to the shaft (2) of the umbrella. Inner rods (6) and outer tubes (7) together form the ribs or spokes of the umbrella which are supported and raised/lowered by primary struts (11) connected between the ribs and a primary shaft slider (12). Outward sliding movement of the outer tubes (7) over the inner rods (6) is assisted by secondary struts (13) which connect a secondary shaft slider (14) (positioned between the primary shaft slider (12) and the canopy end of the shaft) and a respective primary strut (11).